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| EXAMINER |
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YANG, JIE

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08/21/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Claims 1, 7, 11-14, 19-21, 25-27, 29, 33, 34, 37, and 41-44 are pending. No amendments to the claims have been made.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 7, 11, 12, 14, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 05-156301 (From abstract and machine translation, thereafter JP'301) as evidenced by Nakamura et al (US 5,934,542, thereafter US'542) and in view of JP 10-284547 (Abstract, figure, and table, thereafter JP'547).

JP'301 as evidenced by US'542 and in view of JP'547 is applied to the claims 1, 7, 11, 12, 14, and 19-21 for the same reason as stated in the previous rejection dated 1/9/2009.

Claims 13, 33, 34, 37, 41, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sue et al (US 2006/0222853, thereafter, PG'853) in view of JP'301 as evidenced by US'542 and in view of JP'547.

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PG'853 in view of JP'301 as evidenced by US'542 and in view of JP'547 is applied to the claims 13, 33, 34, 37, 41, and 42 for the same reason as stated in the previous rejection dated 1/9/2009.

Claims 25-27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sue et al (US 2006/0222853, thereafter, PG'853) in view of JP'301 as evidenced by US'542 and in view of JP'547.

PG'853 in view of JP'301 as evidenced by US'542 and in view of JP'547 is applied to the claims 25-27 and 49 for the same reason as stated in the previous rejection dated 1/9/2009.

Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sue et al (US 2006/0222853, thereafter, PG'853) in view of JP'301 as evidenced by US'542 and in view of JP'547.

PG'853 in view of JP'301 as evidenced by US'542 and in view of JP'547 is applied to the claims 43 and 44 for the same reason as stated in the previous rejection dated 1/9/2009.

Response to Arguments

Applicant's arguments filed on 5/11/2009 with respect to claims 1, 7, 11-14, 19-21, 25-27, 29, 33, 34, 37, and 41-44 have been fully considered but they are not persuasive.

Applicant's arguments are summarized as follows:

A) Regarding rejection for claims 1, 7, 11, 12, 14, and 19-21, JP'301 does not disclose the use of WC and the Invar or Super Invar powder disclosed in JP'301 has a material composition that includes materials in addition to those within the scope of the Applicants' claims in view of "consisting essentially language. JP'547 fails to disclose a binder alloy having the same material make up as Applicants' binder in independent claims 1 and 14, Nakamura et al(US'542) includes materials in addition to those within the scope of the Applicants' claims in view of "consisting essentially language.

B) Regarding rejection for claims 13, 33, 34, 37, 4, and 42, Sue fails to disclose a binder alloy having the specific material content recited in Applicants' independent claims 1 and 33.

C) Regarding rejection for claims 25-27 and 29, and the rejection for claims 43 and 44, these claims are not obvious in view of the combination of noted references for the same reasons presented above as in applied to independent claim 1, since claims 25 and 43 also recites the specific content of the binder alloy using the "consisting essentially of" language.

Examiner's responses are as follows:

Regarding the arguments A) and C), the Applicants' arguments are against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091,

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231 USPQ 375 (Fed. Cir. 1986). In the instant case, JP'301 teaches mixing Super INVAR powder and carbide ceramic powder in 75:25 to 25:75 mixture and the mixture is sintered with organic binder (Abstract and paragraph [0006] of JP'301). JP'547 teaches WC dispersed in a phase of Co (abstract of JP'547) and Nakamura et al (US'542) teaches the specific Super INVAR composition. The detail discussions and motivations to combine these references can refer to the previous office action marked 1/9/2009. Regarding the limitation of "consisting essentially of" in the instant claims, the transitional language "consisting essentially of" is constructed as equivalent to "comprising." See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355. If an applicant contends that additional steps or materials in the prior art are excluded by the recitation of "consisting essentially of," applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention. In re De Lajarte, 337 F.2d 870, 143 USPQ 256 (CCPA 1964). See MPEP 2111.03. In the instant case, the applicant has not shown that the introduction of the additional alloy elements of the cited prior art would materially change the characteristics of applicant's invention, for example, the Applicants disclose in the instant specification (page 3, summary of the invention) that:

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Low coefficient of thermal expansion (CTE) thermal expansion Cermet composition of this invention generally comprise a hard phase material and a ductile phase binder alloy, wherein the binder alloy is specially designed having a CTE that is closely matched to the CTE of the hard phase material. Hard phase materials used to form low CTE compositions of this invention include cermets having a hard grain component selected from the group of carbides, nitrides, carbonitrides, and borides formed from refractory metals such as W, Ti, Mo, Nb, V, Si, Hf, Ta, and Cr. The ductile phase binder alloy is formed from a mixture of metals selected from the group consisting of Co, Ni, Fe, W, Mo, Ti, Ta, V, Nb, C, B, Cr, and Mn.

The Examiner notes that Applicants have not provided any persuasive evidence to show that the additional elements in JP'301 in view of US'542 and JP'547 would materially change the properties of the claimed mixture of WC with binder alloy.

Regarding the argument B, the applicants' arguments are against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In the instant case, Sue et al (PG'853) teaches a roller cone rock and ceramic WC can be used as cutting inserts in the roller cone rock bits, where the WC is combined with alloys from the group consisting of Co, Ni, Fe, and others (Paragraph [0009] of PG'853) as recited in the instant claims 43 and 44, JP'301 as evidenced by US'542 and in view of JP'547 teaches the mixture composition as discussed in the rejection for the instant claim 1. Therefore, known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to

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one ordinary skill in the art. The detail discussions and motivations to combine these references can refer to the previous office action marked 1/9/2009.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jie Yang whose telephone number is 571-270-1884. The examiner can normally be reached on M-F, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-2721244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JY

/Roy King/
Supervisory Patent Examiner, Art Unit 1793